

1      **ABSTRACT**

2      **INS.** A Methods and systems for generating and sending an XML document are  
3      described. In a specific implementation, methods and systems for responding to  
4      an XML client request are described. In the described embodiment, an XML  
5      response generator is provided. The XML response generator responds to a client  
6      request without having to first build and save a hierarchical tree structure in  
7      memory that represents the response. The response generator includes one or  
8      more request method objects. There is one object for each particular type of client  
9      request that might be received. Each request method object knows and gathers the  
10     data that is needed to respond to its particular associated client request. In  
11     addition, the request method object knows a particular order that the information  
12     must be provided. An emitter object is provided and receives calls from the  
13     request method object. The calls include the data that is gathered by the request  
14     method object. The calls are made in a particular order and ensure that the  
15     hierarchical nature of the response that is being built is preserved. The emitter  
16     object translates the data that it receives into response portions that are in proper  
17     XML syntactic form. A body object is provided and manages a buffer. The body  
18     object receives calls from the emitter object that include the properly-formatted  
19     XML response portions. The response portions are placed in the buffer. When a  
20     defined buffer threshold is reached, the buffered response portions are sent to the  
21     client.